

C85

10/634897

Docket No.: M4065.0700/P700-A
(PATENT)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:
Terry L. Gilton et al.

Patent No.: 6,812,087

Issued: November 2, 2004

For: METHODS OF FORMING NON-
VOLATILE RESISTANCE VARIABLE
DEVICES AND METHODS OF FORMING
SILVER SELENIDE COMPRISING
STRUCTURES

Certificate
FEB 01 2005
of Correction

**REQUEST FOR CERTIFICATE OF CORRECTION
PURSUANT TO 37 CFR 1.322**

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Alexandria, VA 22313-1450

Dear Sir:

Upon reviewing the above-identified patent, Patentee noted typographical errors which should be corrected.

On Page 1

In (75) Inventors: "Giltom" should read --Gilton--

In (56) U.S. PATENT DOCUMENTS: insert
6,423,628 B1 7/2002 Li et al.
6,473,332 10/2002 Ignatiev et al.

OTHER PUBLICATIONS:

"U.S. patent application Ser. No. 6,418,049, Le et al., filed Jul. 23, 2002." should read --U.S. patent application Ser. No. 10/232,757, Le et al. --

On Page 3 OTHER PUBLICATIONS:

Column 1, Ref. #8 "Miyatani, Electrical properties of Ag_2Se , —J. Phys. Soc. Japan, p. 317, 1958." should read --Miyatani, Electrical Properties of Ag_2Se , 13 J. Phys. Soc. Japan, p. 317, 1958.--

Column 1, Ref. #11 "Safran et al., "TEM study of Ag_2Se developed by the reaction of polycrystalline silver films and s l nium," 317 Thin Solid Films, pp. 72-76, 1998." should read --Safran et al., "TEM study of Ag_2Se developed by the reaction of polycrystalline silver films and selenium," 317 Thin Solid Films, pp. 72-76, 1998.--

Column 1, Ref. #12 "Shimizu et al., "The Photo-Erasable Memory Switching Effect of Ag Photo-Doped d Chalcogenide Glasses," 46 BUL. CHEM. SOC. Japan, No. 12, pp. 3662-3665, December 1973." should read --Shimizu et al., "The Photo-Erasable Memory Switching Effect of Ag Photo-Doped Chalcogenide Glasses," 46 BUL. CHEM. SOC. Japan, No. 12, pp. 3662-3665, December 1973.--

On Page 4

Column 1, Ref. #4 "Asokan, S.; Prasad, M.V.N.; Parthasarathy, G.; Gopal, E.S.R., Mechanical and ch mical thr sholds in IV-VI chalcogenide glasses, Phys. R v. L 62 (1989) 808-810." should read --Asokan, S.; Prasad, M.V.N.; Parthasarathy, G.; Gopal, E.S.R., Mechanical and chemical thresholds in IV-VI chalcogenide glasses, Phys. Rev. Lett, 62 (1989) 808-810.--

Column 2, Ref. #7 "Br ss r, W.J.; Boolchand, P.; Suranyi, P.; Hernandez, J.G., Molecular phase separation and cluster siz in G S 2 glass, Hyperfine Interactions 27 (1986) 389-392." should read --Bresser, W.J.; Boolchand, P.; Suranyi, P.; Hernandez, J.G., Molecular phase separation and cluster size in GeSe_2 glass, Hyperfine Interactions 27 (1986) 389-392.--

Column 2, Ref. #8 "Cahen, D.; Gilet, J.-M.; Schmitz, C.; Ch rnyak, L.; Gartsman, K.; Jakubowicz, A., Room-Temperature, electric field induced creation of stable devices in CuInSe_2 Crystals, Science 258 (1992) 271-274." should read --Cahen, D.; Gilet, J. M.; Schmitz, C.; Ch rnyak, L.; Gartsman, K.; Jakubowicz, A., Room-Temperature, electric field induced creation of stable devices in CuInSe_2 Crystals, Science 258 (1992) 271-274.--

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Column 1, Ref. #2 "El Bouchairi, B.; Bernede, J.C.; Burgaud, P., Propeties of $\text{Ag}_{2-x}\text{Se}_{1+x/n}\text{-Si}$ diodes, Thin Solid Films 110 (1983) 107-113." should read --El Bouchairi, B.; Bernede, J.C.; Burgaud, P., Properties of $\text{Ag}_{2-x}\text{Se}_{1+x/n}\text{-Si}$ diodes, Thin Solid Films 110 (1983) 107-113.--

On Page 5 (continued)

Column 1, Ref. #11 “Fadel, M., Switching phenomenon in evaporated S-Ge-As thin films of amorphous chalcogenide glass, Vacuum 44 (1993) 851-855.” should read --Fadel, M., Switching phenomenon in evaporated Se-Ge-As thin films of amorphous chalcogenide glass, Vacuum 44 (1993) 851-855.--

Column 1, Ref. #12 “Fadel, M.; El-Shari, H.T., Electrical, thermal and optical properties of Se₇₅Ge₇Sb₁₈, Vacuum 43 (1992) 253-275.” should read --Fadel, M.; El-Shari, H.T., Electrical, thermal and optical properties of Se₇₅Ge₇Sb₁₈, Vacuum 43 (1992) 253-257.--

Column 2, Ref. #11 “Hegab, N.A.; Fadel, M.; Sedeek, K., Memory switching phenomena in thin films of chalcogenide semiconductors, Vacuum 45 (1994) 459-462.” should read --Hegab, N.A.; Fadel, M.; Sedeek, K., Memory switching phenomena in thin films of chalcogenide semiconductors, Vacuum 45 (1994) 459-462.--

Column 2, Ref. #13 “Hosokawa, S., Atomic and electronic structures of glassy GexSe1-x around the stiffness threshold composition, J. Optoelectronics and Advanced Materials 3 (2001) 199-214.” should read --Hosokawa, S., Atomic and electronic structures of glassy GexSe1-x around the stiffness threshold composition, J. Optoelectronics and Advanced Materials 3 (2001) 199-214.--

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Column 1, Ref. #15 “Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO₂ system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.” should read --Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO₂ system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.--

Column 2, Ref. #18 “Prakash, S.; Asokan, S.; Ghare, D.B., Easily reversible memory switching in Ge-As-Te glasses, J. Phys. D: Appl. Phys. 29 (1996) 2004-2008.” should read --Prakash, S.; Asokan, S.; Ghare, D.B., Easily reversible memory switching in Ge-As-Te glasses, J. Phys. D: Appl. Phys. 29 (1996) 2004-2008.--

Column 2, Ref. #19 “Rahman, S.; Silvarama Sastry, G., Electronic switching in Ge-Bi-Se-Te glasses, Mat. Sci. and Eng. B12 (1992) 219-222.” should read --Rahman, S.; Silvarama Sastry, G., Electronic switching in Ge-Bi-Se-Te glasses, Mat. Sci. and Eng. B12 (1992) 219-222.--

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Column 1, Ref. #18 "Tregouet, Y.; Bernede, J.C., Silver movements in Ag₂Te thin films: switching and memory effects, This Solid Films 57 (1979) 49-54." should read --Tregouet, Y.; Bernede, J.C., Silver movements in Ag₂Te thin films: switching and memory effects, This Solid Films 57 (1979) 49-54.--

Column 1, Ref. #19 "Uemura, O.; Kameda, Y.; Kokai, S.; Satow, T., Thermally induced crystallization of amorphous Ge_{0.4}Se_{0.6}, J. Non-Cryst. Solids 117-118 (1990) 219-221." should read --Uemura, O.; Kameda, Y.; Kokai, S.; Satow, T., Thermally induced crystallization of amorphous Ge_{0.4}Se_{0.6}, J. Non-Cryst. Solids 117-118 (1990) 219-221.--

In the Specification:

Column 1, line 50 "-of" should read --of--

Column 8, line 59 "comprising least" should read --comprising at least--

The above errors were not in the application as filed and not in the IDS citations (copy attached) as filed by the applicant, accordingly no fee is required.

Transmitted herewith is a proposed Certificate of Correction effecting such amendment. Patentee respectfully solicits the granting of the requested Certificate of Correction.

Dated: January 24, 2005

Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371

Elizabeth Parsons

Registration No.: 52,499

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorneys for Applicant



PTO/SB/08a/b (08-03)
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Substitute for form 1449A/B/PTO			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Application Number	10/634,897	
			Filing Date	August 6, 2003	
			First Named Inventor	Terry L. Gilton	
			Art Unit	N/A 2813	
			Examiner Name	Not Yet Assigned Tuan Nguyen	
Sheet	1	of	11	Attorney Docket Number	M4065.0700/P700-A

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
TN	AA	US-6,117,720	09/12/2000	Harshfield	
	AB	US-3,450,967	08/17/1969	Tolutis	
	AC	US-4,350,541	09/21/1982	Mizushima et al.	
	AD	US-1,131,740	02/03/1969	Tolutis	
*	AE	US-3,622,319	11/23/1971	Sharp	
*	AF	US-3,743,847	07/03/1973	Boland	
*	AG	US-4,269,935	05/26/1981	Masters et al.	
*	AH	US-4,312,938	01/26/1982	Drexler et al.	
*	AI	US-4,320,191	03/16/1982	Yoshikawa et al.	
*	AJ	US-4,795,657	01/03/1989	Formigoni et al.	
*	AK	US-4,847,674	07/11/1989	Silwa et al.	
*	AL	US-5,177,567	01/05/1993	Kiersy et al.	
*	AM	US-5,219,788	06/15/1993	Abermathey et al.	
*	AN	US-5,726,083	03/10/1998	Takaishi	
*	AO	US-5,751,012	05/12/1998	Wolstenholme et al.	
*	AP	US-5,789,277	08/04/1998	Zahorik et al.	
*	AQ	US-5,841,150	11/24/1998	Gonzalez et al.	
*	AR	US-5,920,788	07/06/1999	Reinberg	
*	AS	US-5,998,066	12/07/1999	Block et al.	
*	AT	US-6,077,729	06/20/2000	Harshfield	
*	AU	US-6,236,059 B1	05/22/2001	Wolstenholme et al.	
*	AV	US-6,297,170 B1	10/02/2001	Gabriel et al.	
*	AW	US-6,300,684 B1	10/09/2001	Gonzalez et al.	
*	AX	US-6,316,784 B1	11/13/2001	Zahorik et al.	
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*	AZ	US-6,348,365	02/19/2002	Moore et al.	
*	a	US-6,376,284 B1	04/23/2002	Gonzalez et al.	
*	b	US-6,391,688 B1	05/21/2002	Gonzalez et al.	
*	c	US-6,414,378 B1	07/02/2002	Thakur et al.	
*	d	US-6,418,049 B1	07/09/2002	Kozicki et al.	
*	e	US-6,423,628 B1	07/23/2002	Li et al.	
*	f	US-10/077,867		Campbell et al. (as filed)	
*	g	US-10/232,757		Li et al. (as filed)	
*	h	US-6,473,332	10/2002	Ignatiev et al.	
*	i	US-6,469,384	10/2002	Kozicki	
*	j	US-2002/0168820 App.	11/2002	Kozicki	
*	K	US-4,316,946	1/1982	Masters, et al.	
*	l	US-4,419,421	12/1983	Wichelhaus, et al.	
*	m	US-6,487,106	11/26/2002	Kozicki	
*	n	US-5,314,772	5/24/1994	Kozicki	
*	o	US-2002/0190350 APP	12/19/2002	Kozicki	



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Substitute for form 1449A/B/PTO			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Application Number	10/634,897	
			Filing Date	August 6, 2003	
			First Named Inventor	Terry L. Gilton	
			Art Unit	N/A 2813	
			Examiner Name	Not Yet Assigned	
Sheet	3	of	11	Attorney Docket Number	M4065.0700/P700-A

* TN	A29	US-5,512,328	04/1996	Yoshimura et al.	
* TN	A30	US-6,117,720	09/2000	Harshfield	

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ² -Number ³ -Kind Code ⁴ (if known)				
TN	BA	WO 97/48032	12/18/1997	Kozicki et al.		
* TN	BB	WO 99/28914	06/10/1999	Kozicki et al.		
* TN	BC	JP 56126916A	05/10/1981	Akira et al.		
* TN	BD	00/48196 A1	17/09/2000	WIPO (Kozicki et al.)		
* TN	BE	02/21542 A1	13/03/2002	WIPO (Kozicki et al.)		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS						
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T ²
* TN	CA	G. SAFRAN, "Development and properties of single-crystal silver selenide layers," Thin Solid Films, 215 (1992) 147-151.				
	CB	DAS et al., "Theory of the characteristic curves of the silver chalcogenide glass inorganic photoresists," 54 APPL. PHYS. LETT., No. 18, pp. 1745-1747, May 1989.				
	CC	HELBERT et al., "Intralevel hybrid resist process with submicron capability," SPIE Vol. 333, SUBMICRON LITHOGRAPHY, pp. 24-29 (1982).				
	CD	HILT, DISSERTATION: "Materials Characterization of Silver Chalcogenide Programmable Metallization Cells," Arizona State University, pp. title page-114, UMI Company, May 1999.				
	CE	HOLMQUIST et al., "Reaction and Diffusion in Silver-Arsenic Chalcogenide Glass Systems," 82 J. AMER. CERAMIC SOC., Nos. 3-4, pp. 183-188 (Mar.-Apr. 1979).				
	CF	HUGGETT et al., "Development of silver sensitized germanium selenide photoresist by reactive sputter etching in SF ₆ ," 42 APPL. PHYS. LETT., No. 7, pp. 592-594, April 1983.				
	CG	KAWAGUCHI et al., "Mechanism of photosurface deposition," 164-166, J. NON-CRYST. SOLIDS, pp. 1231-1234 (1993).				
	CH	MCHARDY et al., "The dissolution of metals in amorphous chalcogenides and the effects of electron and ultraviolet radiation," 20 J. PHYS. C: SOLID STATE PHYS., pp. 4055-4075, 1987.				
	CI	MIYATANI, "Electrical Properties of Ag ₂ Se, 13 J. Phys. Soc. Japan, p. 317, 1958.				
	CJ	MIZUSAKI et al., "Kinetic Studies on the Selenization of Silver," 47 BUL. CHEM. SOC. Japan, No. 11, pp. 2851-2855, November 1974.				
	CK	OWENS et al., "Metal-Chalcogenide Photoresists for High Resolution Lithography and Sub-Micron Structures," NANOSTRUCTURES PHYSICS AND FABRICATION, pp. 447-451, Academic Press, 1989.				
	CL	SAFRAN et al., "TEM study of Ag ₂ Se developed by the reaction of polycrystalline silver films and selenium," 317 THIN SOLID FILMS, pp. 72-76, 1998.				
* TN	CM	SHIMIZU et al., "The Photo-Erasable Memory Switching Effect of Ag Photo-Doped Chalcogenide Glasses," 46 BUL. CHEM. SOC. Japan, No. 12, pp. 3662-3665, December 1973.				



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		Attorney Docket Number	M4065.0700/P700-A
Sheet	4	of	11

TN	CN	SOMOGYI et al., "Temperature Dependence of the Carrier Mobility in Ag ₂ Se Layers Grown on NaCl and SiO ₂ Substrates, 74 ACTA PHYSICA HUNGARICA, No. 3, pp. 243-255, 1994.
*	CO	TAI et al., "Multilevel Ge-Se film based resist systems," SPIE Vol. 333 SUBMICRON LITHOGRAPHY, pp. 32-39, March 1982.
*	CP	TAI et al., "Submicron optical lithography using an inorganic resist/polymer bilevel scheme," 17 J. Vac. Sci. Technol., No. 5, pp. 1169-1176, Sept/Oct. 1980.
*	CQ	WEST, DISSERTATION: "Electrically Erasable Non-Volatile Memory Via electrochemical Deposition of Multifractal Aggregates," Arizona State University, pp. title page-168, UMI Co., May 1998.
*	CR	WEST et al., "Equivalent Circuit Modeling of the Ag/As _{0.24} Se _{0.36} Ag _{0.40} /Ag System Prepared by Photodissolution of Ag, 145 J. Electrochem. Soc., No. 9, pp. 2971-2974, September 1998.
*	CS	YOSHIKAWA et al., "A new inorganic electron resist of high contrast," 31 APPL. PHYS. LETT., No. 3, pp. 161-163, August 1977.
*	CT	YOSHIKAWA et al., "Dry development of Se-Ge Inorganic photoresist," 36 APPL. PHYS. LETT., No. 1, pp. 107-109, January 1980.
*	CU	KOZICKI, et al., "Applications of Programmable Resistance Changes in Metal-doped Chalcogenides", Proceedings of the 1999 Symposium on Solid State Ionic Devices, Editors - F D Wachsman et al., The Electrochemical Society, Inc., 1 - 12, 1999.
*	CV	HELBERT et al., "Intralevel hybrid resist process with submicron capability," SPIE Vol. 333 SUBMICRON LITHOGRAPHY, pp. 24-29 (1982).
*	CW	M.N. KOZICKI and M. MITKOVA, "Silver incorporation in thin films of selenium rich Ge-Se glasses," Proceedings of the XIX International Congress on Glass, Society for Glass Technology, 226-227 (2001).
*	CX	KOZICKI, et al., "Nanoscale phase separation in Ag-Ge-Se glasses," Microelectronic Engineering, vol. 63/1-3, 155-159 (2002).
*	CY	KOZICKI, et al., "Nanoscale effects in devices based on chalcogenide solid solutions," Superlattices and Microstructures, 27, 485-488 (2000).
*	CZ	Abdel-Ali, A.; Elshafie, A.; Elhawary, M.M., DC electric-field effect in bulk and thin-film Ge ₅ As ₃₈ Te ₅₇ chalcogenide glass, Vacuum 59 (2000) 845-853.
*	C0	Adler, D.; Moss, S.C., Amorphous memories and bistable switches, J. Vac. Sci. Technol. 9 (1972) 1182-1189.
*	C1	Adler, D.; Henisch, H.K.; Mott, S.N., The mechanism of threshold switching in amorphous alloys, Rev. Mod. Phys. 50 (1978) 209-220.
*	C2	Affifi, M.A.; Labib, H.H.; El-Fazary, M.H.; Fadel, M., Electrical and thermal properties of chalcogenide glass system Se ₇₅ Ge _{25-x} Sb _x , Appl. Phys. A 55 (1992) 167-169.
*	C3	Affifi, M.A.; Labib, H.H.; Fouad, S.S.; El-Shazly, A.A., Electrical & thermal conductivity of the amorphous semiconductor GexSe1-x, Egypt, J. Phys. 17 (1986) 335-342.
*	C4	Alekperova, Sh.M.; Gadzhieva, G.S., Current-Voltage characteristics of Ag ₂ Se single crystal near the phase transition, Inorganic Materials 23 (1987) 137-139.
*	C5	Aleksiejunas, A.; Cesnys, A., Switching phenomenon and memory effect in thin-film heterojunction of polycrystalline selenium-silver selenide, Phys. Stat. Sol. (a) 19 (1973) K169-K171.
*	C6	Angell, C.A., Mobile ions in amorphous solids, Annu. Rev. Phys. Chem. 43 (1992) 693-717.
*	C7	Aniya, M., Average electronegativity, medium-range-order, and ionic conductivity in superionic glasses, Solid state Ionics 136-137 (2000) 1085-1089.
*	C8	Asahara, Y.; Izumitani, T., Voltage controlled switching in Cu-As-Se compositions, J. Non-Cryst. Solids 11 (1972) 97-104.
*	C9	Asokan, S.; Prasad, M.V.N.; Parthasarathy, G.; Gopal, E.S.R., Mechanical and chemical thresholds in IV-VI chalcogenide glasses, Phys. Rev. Lett. 62 (1989) 808-810
* TN	C10	Baranovskii, S.D.; Cordes, H., On the conduction mechanism in ionic glasses, J. Chem. Phys. 111 (1999) 7546-7557.



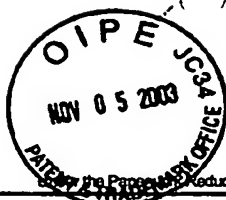
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Sheet	5	of	11	Attorney Docket Number	M4065.0700/P700-A

* <i>TM</i>	C11	Belin, R.; Taillades, G.; Pradel, A.; Ribes, M., Ion dynamics in superionic chalcogenide glasses: complete conductivity spectra, Solid state Ionics 136-137 (2000) 1025-1029.
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*	C13	Benmore, C.J.; Salmon, P.S., Structure of fast ion conducting and semiconducting glassy chalcogenide alloys, Phys. Rev. Lett. 73 (1994) 264-267.
*	C14	Bernede, J.C., Influence du metal des electrodes sur les caracteristiques courant-tension des structures M-Ag ₂ Se-M, Thin solid films 70 (1980) L1-L4.
*	C15	Bernede, J.C., Polarized memory switching in MIS thin films, Thin Solid Films 81 (1981) 155-160.
*	C16	Bernede, J.C., Switching and silver movements in Ag ₂ Se thin films, Phys. Stat. Sol. (a) 57 (1980) K101-K104.
*	C17	Bernede, J.C.; Abachi, T., Differential negative resistance in metal/insulator/metal structures with an upper bilayer electrode, Thin solid films 131 (1985) L61-L64.
*	C18	Bernede, J.C.; Conan, A.; Fousenat, E.; El Bouchairi, B.; Goureaux, G., Polarized memory switching effects in Ag ₂ Se/Se/M thin film sandwiches, Thin solid films 97 (1982) 165-171.
*	C19	Bernede, J.C.; Khalil, A.; Kettaf, M.; Conan, A., Transition from S- to N-type differential negative resistance in Al-Al ₂ O ₃ -Ag ₂ -xSe _{1+x} thin film structures, Phys. Stat. Sol. (a) 74 (1982) 217-224.
*	C20	Bondarev, V.N.; Pikhitsa, P.V., A dendrite model of current instability in RbAg ₄ I ₅ , Solid State Ionics 70/71 (1994) 72-76.
*	C21	Boolchand, P., The maximum in glass transition temperature (T _g) near x=1/3 in GexSe _{1-x} Glasses, Asian Journal of Physics (2000) 9, 709-72.
*	C22	Boolchand, P.; Bresser, W.J., Mobile silver ions and glass formation in solid electrolytes, Nature 410 (2001) 1070-1073.
*	C23	Boolchand, P.; Georgiev, D.G.; Goodman, B., Discovery of the Intermediate Phase in Chalcogenide Glasses, J. Optoelectronics and Advanced Materials, 3 (2001), 703
*	C24	Boolchand, P.; Selvanathan, D.; Wang, Y.; Georgiev, D.G.; Bresser, W.J., Onset of rigidity in steps in chalcogenide glasses, Properties and Applications of Amorphous Materials, M.F. Thorpe and Tichy, L. (eds.) Kluwer Academic Publishers, the Netherlands, 2001, pp. 97-132.
*	C25	Boolchand, P.; Enzweiler, R.N.; Tenhover, M., Structural ordering of evaporated amorphous chalcogenide alloy films: role of thermal annealing, Diffusion and Defect Data Vol. 53-54 (1987) 415-420.
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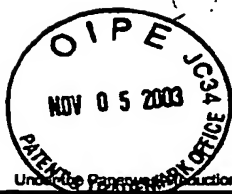
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C141	Titus, S.S.K.; Chatterjee, R.; Asokan, S., Electrical switching and short-range order in As-Te glasses, Phys. Rev. B 48 (1993) 14650-14652.
C142	Tranchant, S.; Peytavin, S.; Ribes, M.; Flank, A.M.; Dexpert, H.; Lagarde, J.P., Silver chalcogenide glasses Ag-Ge-Se: Ionic conduction and exafs structural investigation, Transport-structure relations in fast ion and mixed conductors Proceedings of the 6th Riso International symposium. 9-13 September 1985.
C143	Tregouet, Y.; Bernede, J.C., Silver movements in Ag2Te thin films: switching and memory effects, Thin Solid Films 57 (1979) 49-54.
C144	Uemura, O.; Kamada, Y.; Kokai, S.; Satow, T., Thermally induced crystallization of amorphous Ge0.4Se0.6, J. Non-Cryst. Solids 117-118 (1990) 219-221.

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,812,087
DATED : November 2, 2004
INVENTOR(S) : Terry L. Gilton et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On Page 1

In (75) Inventors: "Giltom" should read --Gilton--

In (56) U.S. PATENT DOCUMENTS: insert

6,423,628 B1 7/2002 Li et al.

6,473,332 10/2002 Ignatiev et al.

OTHER PUBLICATIONS:

"U.S. patent application Ser. No. 6,418,049, Le et al., filed Jul. 23, 2002." should read --U.S. patent application Ser. No. 10/232,757, Le et al.--

On Page 3 OTHER PUBLICATIONS:

Column 1, Ref. #8 "Miyatani, Electrical properties of Ag₂Se, —J. Phys. Soc. Japan, p. 317, 1958." should read --Miyatani, Electrical Properties of Ag₂Se, 13 J. Phys. Soc. Japan, p. 317, 1958.--

Column 1, Ref. #11 "Safran et al., "TEM study of Ag₂Se developed by the reaction of polycrystalline silver films and s I n i u m," 317 Thin Solid Films, pp. 72-76, 1998." should read --Safran et al., "TEM study of Ag₂Se developed by the reaction of polycrystalline silver films and selenium," 317 Thin Solid Films, pp. 72-76, 1998.--

On Page 4

Column 1, Ref. #4 "Asokan, S.; Prasad, M.V.N.; Parthasarathy, G.; Gopal, E.S.R., Mechanical and ch mical thr sholds in IV-VI chalcogenide glasses, Phys. R v. L 62 (1989) 808-810." should read --Asokan, S.; Prasad, M.V.N.; Parthasarathy, G.; Gopal, E.S.R., Mechanical and chemical thresholds in IV-VI chalcogenide glasses, Phys. Rev. Lett, 62 (1989) 808-810.--

Column 2, Ref. #7 "Br ss r, W.J.; Boolchand, P.; Suranyi, P.; Hernandez, J.G., Molecular phase separation and cluster siz in G S 2 glass, Hyperfine Interactions 27 (1986) 389-392." should read --Bresser, W.J.; Boolchand, P.; Suranyi, P.; Hernandez, J.G., Molecular phase separation and cluster size in GeSe₂ glass, Hyperfine Interactions 27 (1986) 389-392.--

MAILING ADDRESS OF SENDER:
Thomas J. D'Amico
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
2101 L Street NW
Washington, DC 20037-1526

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Column 2, Ref. #8 "Cahen, D.; Gilet, J.-M.; Schmitz, C.; Chernyak, L.; Gartsman, K.; Jakubowicz, A., Room-Temperature, electric field induced creation of stable devices in CuInSe_2 Crystals, Science 258 (1992) 271-274." should read --Cahen, D.; Gilet, J. M.; Schmitz, C.; Chernyak, L.; Gartsman, K.; Jakubowicz, A., Room-Temperature, electric field induced creation of stable devices in CuInSe_2 Crystals, Science 258 (1992) 271-274.--

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Column 1, Ref. #2 "El Bouchairi, B.; Bernede, J.C.; Burgaud, P., Propeties of $\text{Ag}_{2-x}\text{Se}_1+x/\text{n-Si}$ diodes, Thin Solid Films 110 (1983) 107-113." should read --El Bouchairi, B.; Bernede, J.C.; Burgaud, P., Properties of $\text{Ag}_{2-x}\text{Se}_1+x/\text{n-Si}$ diodes, Thin Solid Films 110 (1983) 107-113.--

Column 1, Ref. #11 "Fadel, M., Switching phenomenon in evaporated S-Ge-As thin films of amorphous chalcogenid glass, Vacuum 44 (1993) 851-855." should read --Fadel, M., Switching phenomenon in evaporated Se-Ge-As thin films of amorphous chalcogenide glass, Vacuum 44 (1993) 851-855.--

Column 1, Ref. #12 "Fadel, M.; El-Shari, H.T., Electrical, thermal and optical properties of $\text{Se}_{75}\text{Ge}_{25}\text{Sb}_{18}$, Vacuum 43 (1992) 253-275." should read --Fadel, M.; El-Shari, H.T., Electrical, thermal and optical properties of $\text{Se}_{75}\text{Ge}_{25}\text{Sb}_{18}$, Vacuum 43 (1992) 253-257.--

Column 2, Ref. #11 "Hegab, N.A.; Fadel, M.; Sedeek, K., Memory switching phenomena in thin films of chalcogenide semiconductors, Vacuum 45 (1994) 459-462." should read --Hegab, N.A.; Fadel, M.; Sedeek, K., Memory switching phenomena in thin films of chalcogenide semiconductors, Vacuum 45 (1994) 459-462.--

Column 2, Ref. #13 "Hosokawa, S., Atomic and electronic structures of glassy GexSe_{1-x} around the stiffness threshold composition, J. Optoelectronics and Advanced Materials 3 (2001) 199-214." should read --Hosokawa, S., Atomic and electronic structures of glassy GexSe_{1-x} around the stiffness threshold composition, J. Optoelectronics and Advanced Materials 3 (2001) 199-214.--

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Column 1, Ref. #15 "Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO₂ system, Jap. J. Appl. Phys. 11 (1972) 1657-1662." should read --Matsushita, T.; Yamagami, T.; Okuda, M., Polarized memory effect observed on Se-SnO₂ system, Jap. J. Appl. Phys. 11 (1972) 1657-1662.--

Column 2, Ref. #18 "Prakash, S.; Asokan, S.; Ghare, D.B., Easily reversible memory switching in Ge-As-Te glasses, J. Phys. D: Appl. Phys 29 (1996) 2004-2008." should read --Prakash, S.; Asokan, S.; Ghare, D.B., Easily reversible memory switching in Ge-As-Te glasses, J. Phys. D: Appl. Phys. 29 (1996) 2004-2008.--

MAILING ADDRESS OF SENDER:
Thomas J. D'Amico
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
2101 L Street NW
Washington, DC 20037-1526

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On Page 6 (continued)

Column 2, Ref. #19 "Rahman, S.; Silvarama Sastry, G., Electronic switching in Ge-Bi-Se-Te glasses, Mat. Sci. and Eng. B12 (1992) 219-222." should read --Rahman, S.; Silvarama Sastry, G., Electronic switching in Ge-Bi-Se-Te glasses, Mat. Sci. and Eng. B12 (1992) 219-222.--

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Column 1, Ref. #18 "Tregouet, Y.; Bernede, J.C., Silver movements in Ag₂Te thin films: switching and memory effects, This Solid Films 57 (1979) 49-54." should read --Tregouet, Y.; Bernede, J.C., Silver movements in Ag₂Te thin films: switching and memory effects, This Solid Films 57 (1979) 49-54.--

Column 1, Ref. #19 "Uemura, O.; Kameda, Y.; Kokai, S.; Satow, T., Thermally induced crystallization of amorphous Ge_{0.4}Se_{0.6}, J. Non-Cryst. Solids 117-118 (1990) 219-221." should read --Uemura, O.; Kameda, Y.; Kokai, S.; Satow, T., Thermally induced crystallization of amorphous Ge_{0.4}Se_{0.6}, J. Non-Cryst. Solids 117-118 (1990) 219-221.--

Column 1, line 50 "-of" should read --of--

Column 8, line 59 "comprising least" should read --comprising at least--

MAILING ADDRESS OF SENDER:
Thomas J. D'Amico
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
2101 L Street NW
Washington, DC 20037-1526

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